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ABSTRACT

In 1984, 94 college freshmen attended the SEEK Prefreshman Summer Program at Baruch College in the city of New York. This program, held for six weeks during the summer prior to college, provided skills remediation, counseling, and financial aid to freshmen from educationally and economically disadvantaged backgrounds. Its goal was to improve students' academic and coping skills in order to increase their chances of success in college. A study was conducted to compare the first-year enrollment and academic outcomes of incoming SEEK freshmen who participated in the program with incoming freshmen who did not participate. The investigator found that: (1) SEEK freshmen were demographically distinct: the program served proportionately more females and blacks, and fewer Asians. (2) The program participants, most of whom came from vocational high schools, required assistance in mathematics. Otherwise, their academic preparation was similar to non-participants. (3) Program participants who advanced after completing a summer remedial course continued to show adequate overall academic performance during their first semester. (4) Participants' academic performance in their first two semesters did not differ greatly from that of non-participants. Prior academic preparation was more important than program participation in determining first-year outcomes. (5) Proportionately fewer program participants than non-participants re-enrolled in the second semester. (6) Participants who did not re-enroll were more likely to leave on an official basis, such as transferring to another institution. (Author/KH)

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THE SEEK PREFRESHMAN SUMMER PROGRAM AT BARUCH COLLEGE, 1984: A FOLLOWUP STUDY

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SUMMARY

In 1984, ninety-four college freshmen attended the SEEK Prefreshman Summer Program at Baruch College. This program, held for six weeks during the summer prior to college, provided skills remediation, counseling, and financial aid to freshmen from educationally and economically disadvantaged backgrounds. Its goal was to improve students' academic and coping skills in order to increase their chances of success in college.

This study compares the first-year enrollment and academic outcomes of incoming SEEK freshmen who participated in the program with others who did not participate in the program. The study found that:

-- The SEEK freshmen who attended the program were demographically distinct. The program served proportionately more females and blacks, and proportionately fewer Asians.

-- The program drew students needing assistance in mathematics. More of them came from vocational than academic high schools. The academic preparation of program participants was otherwise comparable to that of nonparticipants.

-- Program participants who advanced after completing a summer remedial course continued to show adequate overall academic performance during their first semester.

-- Program participants' academic performance in their first and second semesters did not differ greatly from that of nonparticipants. Rather, students' prior academic preparation was more important than program participation in determining first-year outcomes.

-- Proportionately fewer program participants (89%) than nonparticipants (93%) re-enrolled the second semester.

-- Program participants who did not re-enroll were more likely to leave on an official basis, many with the intention of transferring to another institution. Nonparticipants were more likely to leave unofficially, fewer intending to transfer to another institution.

The investigator recommends further study of program processes which appeared to help students to manage decisions regarding college withdrawal, and continued experimentation with instructional techniques to strengthen the impact of remediation. The investigator also suggests that broadening the summer curriculum may have implications for improving SEEK students' educational prospects.

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I. INTRODUCTION

Students who enter college from impoverished backgrounds and with poorer educational preparation than their peers are at greater risk of academic failure and withdrawal from college. Compensatory programs aim to offset the pernicious effects of prior disadvantage through a variety of educational interventions targeted to the needs of this special population (Tinto and Sherman, 1975; Kulik, Kulik and Schwalb, 1983). This study examines one such effort by the SEEK program at Baruch College[1] to increase students' chances of success through pre-college remediation and counseling experiences.

Each summer, Baruch College conducts a six-week college preparatory program for incoming SEEK freshmen, known as the SEEK Prefreshman Summer Program. The program offers remedial instruction and tutoring in mathematics, reading, and writing, group and individualized counseling, and financial aid.[2]

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1. The SEEK (Search for Education, Elevation, and Knowledge) program is a special opportunity program for economically and educationally disadvantaged students in senior colleges of the City University of New York (CUNY).

2. This program is conducted at other CUNY colleges where its design and operation may differ.

The intent of the SEEK Prefreshman Summer Program is to give SEEK students an opportunity to receive early and intensive skills remediation and counseling prior to their regular entry into college. The program is supposed to ease students' transition from high school to college and, in so doing, increase their chances of later academic success. Participation in the prefreshman summer program gives students the benefits of additional remediation time, early exposure to college courses and responsibilities, and assistance with academic and personal concerns. In addition, the program intends to promote students' social integration into college -- believed to be a significant factor in college retention (Spady, 1971; Tinto, 1975; Pascarella and Terenzini, 1977, 1978; Pascarella, 1980, 1981; Endo and Harpel, 1982; Chapman and Pascarella, 1983; Pascarella, Duby, Terenzini, and Iverson, 1983) -- by placing students in a more intimate educational setting with a small social network of faculty and students. Program developers hope that the program will reinforce participating students' motivation to attend college, already demonstrated by these students' voluntary enrollment in the summer program.

The SEEK Prefreshman Summer Program at Baruch College has been annually evaluated by the City University (Bengis, 1985) and, in the last three years, by the college program itself (Podell, 1983; Tan, 1984; Avellani, 1985). These studies provided information on the program's immediate outcomes, and documented participants' progress as observed over the six-week program

period. Generally speaking, the program has demonstrated high completion rates, and allowed many students to begin their freshman year at more advanced skill levels than would have been possible without summer remediation.

These studies did not look at whether participating students continued to attend and progress in college, nor evaluated whether the program made a positive contribution to their later academic performance. However, in a followup of CUNY students who attended the 1982 SEEK Prefreshman Summer Program [3], CUNY researchers observed higher spring semester re-enrollment rates among program participants (91.5%) as compared with SEEK freshmen who did not participate (84%). They also found more program participants (48%) than nonparticipants (45%) to be performing above a C average; program participants earned an average of 1-1/4 credits more than nonparticipants by the end of the first year. These findings are consistent with other evidence that participation in a summer school program increases the likelihood of re-enrollment in subsequent semesters, particularly among disadvantaged students (Kapsis and Protash, 1983).

This study reports the first and second semester enrollment and academic outcomes of students who participated in the SEEK Prefreshman Summer Program at Baruch College in 1984. Its

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3. Annual Report for the SEEK and College Discovery Programs of the City University of New York, 1982-1983, Office of Special Programs, City University of New York.

purpose is to determine whether participation in the summer program was associated with higher rates of student retention and/or better academic performance, as well as the extent to which background and educational characteristics may have been related to summer program participation or subsequent college outcomes. Background factors such as sex and ethnicity are known to be related to patterns of academic performance and persistence (Astin 1971, 1972, 1982; Lavin, Alba, and Silberstein, 1981), while measures of educational preparation -- such as high school average or academic aptitude -- are among the strongest predictors of later success in college (Pantages and Creedon, 1978; Tinto, 1975). The study considers effects of background and educational preparation in order to better assess the summer program's contribution to college outcomes.

II. DESCRIPTION OF THE STUDY

Design

Although all incoming SEEK-eligible freshmen were invited to attend the SEEK Prefreshman Summer Program, participation in the program was voluntary. This led to the natural formation of a treatment and a non-treatment group. This study compares the background and college outcomes of incoming SEEK freshmen who participated in the summer program (participants) with those of incoming SEEK freshmen who did not participate in the summer program (nonparticipants). Students in both groups met SEEK eligibility criteria and were, thus, both financially and educationally disadvantaged relative to their college peers.

Since students attended the summer program by choice, their assignment to treatment and non-treatment groups was not random. As a consequence, any differences between the groups which might appear to be due to the program might also be attributable to characteristics of the self-selected groups of students under study. For this reason, findings regarding the program's impact should be interpreted with caution, since the design does not

isolate program effects from other effects that may be due to the sample.[1]

Students

Summer program participants. This study reports outcomes for 87 of the 93 students who completed the SEEK Prefreshman Summer Program in 1984. Two students were intentionally excluded from the analyses as special cases: one did not meet eligibility criteria for SEEK; the other had been enrolled at Baruch during the Spring 1984 term prior to participating in the summer program and was no longer an incoming freshman. Four other students who participated in the summer program did not enroll in Fall, 1984.

Fall entering freshmen. A total of 373 SEEK freshmen who did not participate in the summer program enrolled during Fall, 1984. Their background characteristics and first-year outcomes are compared with those of program participants. In addition, to evaluate the relative contribution of background variables and program participation, program participants were compared with a random sample of nonparticipants. The sample of nonparticipants consisted of 97 students and was selected to be of comparable size to the treatment group to allow for a more balanced analytic

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1. See: Cook, T. and Campbell, D. Quasi-experimentation: Design and analysis issues for field settings. Boston: Houghton-Mifflin, 1979.

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design and statistical treatment.

Sources of Data

Information on students' background, academic preparation, and performance in college was obtained from a biographical questionnaire and college records. A summary of the variables collected from these sources appears in Table 1.

Biographical questionnaire. The SEEK freshman orientation class, taught by SEEK counselors, is a regular part of each SEEK student's academic program in the first semester. During the first month of freshman orientation classes, SEEK counselors collected demographic and background information by distributing a biographical questionnaire.

College records. Information on students' high school preparation -- the type of high school they attended and their high school average -- was obtained from admissions records. Test records of students' initial scores on the CUNY Freshman Skills Assessment Tests in mathematics, reading, and writing were used to determine students' basic skills preparation at the time of college entry.[2]

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2. All incoming freshmen are administered three CUNY skills assessment tests -- mathematics, reading and writing -- prior to or immediately upon college entry. The majority of students (95%) take the tests during the spring semester before college.

Transcript records provided information on the enrollment and academic performance of SEEK students in the Fall, 1984 and Spring, 1985 semesters. Academic outcomes were summarized in terms of students' performance in noncredit and credit courses. Students may pass or fail a noncredit course. In credit-bearing courses, students receive a grade which is used in conjunction with the number of course credits to determine the semester grade point average. Students can also receive a WU grade in a course (unofficial withdrawal), which is equivalent to course failure. Two academic outcomes that together reflect a student's performance during a semester are, thus, the percentage of noncredit courses passed, and the semester grade point average. The cumulative grade point average reflects students' overall rate of progress by summarizing their performance in credit-bearing courses over all completed semesters. Measures of credit accumulation -- credits completed per term and cumulative credits -- were also used, however, these measures revealed largely the same information as semester and cumulative grade point average, and depended heavily on the courseload taken (noncredit:credit course ratio).

Students' individual counseling records provided information on the reasons why some students failed to re-enroll in Spring, 1985.

Table 1

Sources and Variables

BACKGROUND AND PREPARATION

-- Biographical Questionnaire

- Sex
- Age
- Ethnicity
- Language(s)

-- College Records

Admissions

- Type of high school last attended
- High school average

Testing: CUNY Skills Assessment Tests

- Initial score in Mathematics
- Initial score in Reading
- Initial score in Writing

ACADEMIC COURSELOAD AND OUTCOMES

Transcripts

- Number of noncredit courses taken per term
- Number of credit courses taken per term
- Percent of noncredit courses passed per term
- Grade point average per term
- Cumulative grade point average over two terms
- Number of credits earned per term
- Cumulative credits over two terms

COLLEGE WITHDRAWAL

SEEK counseling records

- Reason for leaving

III. FINDINGS

Background and Academic Preparation

A student's background and academic preparation may affect whether the student participates in the program and/or how well the student does in college during subsequent semesters. How comparable were the groups on these dimensions -- that is, were there initial differences between students who chose to participate in the prefreshman summer program and those who did not?

SEEK freshmen who participated in the summer program were demographically distinct from SEEK freshmen who entered in the fall semester (Appendix 1). While the modal age in both groups was the same, between 18-19 years old, a larger proportion of summer program participants were women. With respect to ethnic distribution, proportionately more students attending the summer program were black, and proportionately fewer were Asian. Bilingualism was most prevalent among Hispanics and Asians; consequently, the summer program served proportionately fewer bilingual students than entered in the fall (42.9% of participants were bilingual, as compared with 51.5% of

nonparticipants).

The high school preparation of summer program participants and nonparticipants differed (Appendix 2) in that while the majority of SEEK freshmen had attended academic high schools, the summer program served proportionately fewer students from academic high schools and more from vocational high schools. The mean high school average of program participants was somewhat higher than that of nonparticipants, however, this difference was not substantial and was probably due to the fact that students from vocational high schools tended to have higher high school averages.

Since most of the summer program classes provided mathematics remediation, students who attended the summer program tended to have performed less well on their initial mathematics skills assessment test. Comparing the groups' initial test scores across skill areas, summer program participants scored lower in mathematics, while their reading and writing scores were comparable or better (Appendix 3).

Observed relationships between demographic variables and academic preparation provide some explanation of why certain

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1. Analyses of covariance evaluated relationships among background characteristics and initial test scores of students in the two groups. These analyses compared participants with an approximately equal-sized, randomly selected sample of nonparticipants, treating initial skill test score as the dependent measure, and sex, ethnicity, bilingualism, age, high school type, high school average, and initial scores on the other two skills tests as covariates. Bonferroni t-tests were used to

students were more likely to attend the summer program.[1] Males tended to perform better than females ($p < .05$), and Asians better than other ethnic groups ($p < .05$) on the initial mathematics test.[2] Conversely, white and American black students scored higher than Asian students on the writing test ($p < .05$)[3] while on the reading test, whites scored higher than all other ethnic groups ($p < .05$).[4] Since the summer program dealt primarily with mathematics remediation, it stands to reason that proportionately fewer males and Asians enrolled in the summer program, and that many bilingual students who required remediation in language skills but not mathematics did not enroll until the fall.

perform pairwise comparisons.

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2. Main effects for sex, ($F = 6.42$, $p < .05$), ethnicity ($F = 4.49$, $p < .001$, high school average ($F = 9.02$, $p < .01$), and initial score in reading ($F = 8.06$, $p < .01$) were obaerved in predicting initial mathematics performance; controlling for all covariates, ethnicity ($F = 4.03$, $p < .001$), high school average ($F = 4.19$, $p < .05$) and initial reading score ($F = 6.66$, $p < .05$) were significant predictors.

3. Ethnicity ($F = 2.41$, $p < .05$) and initial reading score ($F = 11.23$, $p < .01$) predicted initial writing performance, controlling for all covariates.

4. Ethnicity ($F = 2.11$, $p < .05$, initial math score $F = 6.66$, $p < .05$), and initial writing score ($F = 11.23$, $p < .01$) significantly predicted initial reading performance, controlling for all covariates.

College Outcomes

First Semester: Fall, 1984 Results

Followup on program participants by fall placement. The summer program gives students a head start with their remedial work, thus enabling those who perform well to begin their first semester of college at a more advanced course level than would otherwise have been possible. In assessing program effects, one concern is whether students who were advanced sustained their progress in subsequent semesters. How did their performance compare with that of participants who repeated the same remedial course?

The overall performance of participants who were advanced compared favorably to that of participants who later repeated the same remedial course (Table 2). Students who performed successfully in the summer program, thus, appeared to benefit from the opportunity to begin college at a more advanced level.

Table 2

Fall Academic Outcomes of Summer Program Participants

By Remedial Placement

	Advanced Level			Same Level		
	N	Mean	(S.D.)	N	Mean	(S.D.)
Math Students						
% of Noncredit Courses Passed	47	71.1	(28.8)	10	34.2	(31.5)
Term G.P.A.	45	2.1	(.8)	8	1.1	(.9)
Reading Students						
% of Noncredit Courses Passed	3	83.3	(28.9)	4	55.4	(23.7)
Term G.P.A.	3	2.0	(.3)	4	1.1	(.7)
Writing Students						
% of Noncredit Courses Passed	3	100.0	(0.0)	19	78.9	(32.0)
Term G.P.A.	3	2.6	(1.4)	19	1.4	(.8)

The academic performance of participants and nonparticipants. Table 3 compares the Fall, 1984 academic outcomes of summer program participants with those of nonparticipants. Accordingly, nonparticipants passed a greater percentage of their noncredit courses than did participants. This apparent superiority of the non-treatment group in the percentage of noncredit courses passed persisted in analyses which controlled for effects related to background, initial academic preparation, and courseload (Appendix 4).[1] These analyses also revealed initial mathematics score ($F = 21.48$, $p < .0001$), initial reading score ($F = 7.48$, $p < .01$), and high school average ($F = 3.94$, $p < .05$) to significantly contribute to the percentage of noncredit courses passed in the fall.

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1. Separate analyses of covariance were performed treating each outcome variable as the dependent measure, and background and academic preparation variables as the covariates. These analyses compared participants to an approximately equal-sized, randomly selected sample of nonparticipants, and dealt only with the scores of students who were initially tested prior to July, 1984, the start of the summer session.

Table 3

Fall, 1984 Academic Outcomes, By Entry Group

	Participants (N=91)			NonParticipants (N=373)		
Outcome Measure	N	Mean	(S.D.)	N	Mean	(S.D.)
% of Noncredit Courses Passed	87	69.6	(32.5)	362	80.2	(27.6)
Term Grade Point Average	83	1.8	(.9)	366	1.7	(.9)

The mean fall semester grade point average of participants and nonparticipants, although slightly favoring summer program students, did not differ to a meaningful degree. Performance in credit-bearing courses appeared, instead, to be related to initial reading skill ($F = 4.47$, $p < .05$) and high school average ($F = 5.04$, $p < .05$). The fall term courseloads of participants and nonparticipants differed, participants taking somewhat more noncredit and fewer credit courses than nonparticipants; however, this difference in courseload did not appear to be linked with fall term outcomes. Nonetheless, it would partially explain why participants earned somewhat fewer credits during their first term (an average of 5.3 earned credits) than did nonparticipants (an average of 6.0 earned credits).

The incidence of unofficial course withdrawal among participants and nonparticipants. Evidence exists to suggest

that the likelihood of leaving college is greater for SEEK students who receive WU grades in courses (Fox, 1984). The WU grade -- equivalent to course failure -- usually signifies that the student stopped attending classes.

Students who received one or more WU's in fall classes were not distinct with regard to their sex, ethnicity, age, or high school type. These students tended to enter college less prepared, demonstrating somewhat lower high school averages; also, participants receiving WU grades in fall had slightly lower initial mathematics and writing skills test scores as compared with all participants (Appendix 5). On the whole, however, these students' initial skills were not especially deficient relative to other SEEK freshmen, suggesting that unofficial course withdrawal could not be completely attributed to poor academic preparation.

A slightly higher proportion of participants (10 students, or 11.5%) received one or more WU grades in the fall than did nonparticipants (36 students, or 9.6%). However, WU grades were a somewhat better predictor of attrition for nonparticipants than for participants: over one-fourth of nonparticipants who received one or more WU grades failed to re-enroll the following semester (N = 10), as compared with one-fifth of summer program participants (N = 2).

Re-enrollment of participants and nonparticipants. A somewhat smaller proportion of summer program participants

re-enrolled for the spring semester: 81, or 89.0 percent of participants and 348, or 93.3 percent of nonparticipants re-enrolled in the spring. Students who did not re-enroll showed no particular pattern with regard to their sex, ethnicity, or age; however, in both groups, students from vocational high schools left at somewhat higher rates than students from academic high schools. Since proportionately more participants than nonparticipants attended vocational high schools, high school background may be a factor which partially explains the higher attrition rate of participants.[2] It should also be noted that most summer program participants began college immediately after high school and attended continuously through the fall. The urge to take a break from college in the spring may have been stronger among participants than nonparticipants. Future re-enrollment data would further clarify whether these students returned after a period of leave.

Reasons for leaving. Although proportionately more summer program students chose not to re-enroll in the spring, they were more likely to do so on an official basis; nonparticipants were more likely to leave unofficially. Counseling records from the previous semester revealed the circumstances surrounding this

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2. Among participants, 5, or 50.0 percent of leavers were from vocational high schools, as compared with 20.9 percent of students from vocational high schools in the entire group; among nonparticipants, 4, or 15.4 percent of leavers were from vocational high schools, as compared with 8.6 percent of students from vocational high schools in the entire group.

decision (Table 4). Students who did not re-enroll either transferred, went on official leave for approved reasons (e.g., medical, family, employment), or were debarred according to college academic policy; others did not re-enroll but failed to request official leave from the college. This latter group, by withdrawing from the college unofficially, endangered their chances of returning. Proportionately more summer program participants transferred -- thus intending to continue college at an institution more appropriate to their interests and abilities -- or took an official leave of absence. Under both these circumstances students insured, or at least did not jeopardize, their chances of continuing college. Nonparticipants tended to withdraw for unknown reasons.

It would seem that summer program students were either more willing or better able to manage their withdrawal actions through communication of their intent to leave. This observation is corroborated by patterns of course withdrawal during the previous semester. A higher proportion of participants left college in the fall by officially withdrawing from all of their courses (4.6% of participants, as compared with 1.3% of nonparticipants). Also, of the students who did not re-enroll in the spring, fewer participants left after receiving WU grades in fall courses (20%) than nonparticipants (38.5%).

Table 4

Attrition in Spring, 1985, By Entry Group

	Participants (N=91)			NonParticipants (N=373)		
Circumstance	N	% of leavers	% of all	N	% of leavers	% of all
Transferred	2	20.0	2.2	2	8.0	.5
Official leave	6	60.0	6.6	6	24.0	1.6
Debarred	0	0.0	0	1	4.0	.3
Unofficial leave	2	20.0	2.2	16*	64.0	4.3
Total Leavers	10	100.0	11.0	25	100.0	6.7

*4 of these students returned to Baruch in Fall, 1985.

Second Semester: Spring, 1985 Results

Student attrition between Fall and Spring semesters introduces a further source of bias into comparisons between the academic performance of participants and nonparticipants. In both groups, students who did not re-enroll in the spring entered college with somewhat poorer skills and performed less well during the fall (Appendix 6).

Spring semester outcomes of remaining participants and

nonparticipants are, thus, complicated by the fact that not all of the original students remained, and that those who remained tended to have been more prepared and perform better academically during their first semester.

Inspection of spring term outcomes showed little difference in performance between participants and nonparticipants; however, nonparticipants tended to pass a greater percentage of their noncredit courses than participants, of those students still taking one or more noncredit courses (Table 5). This finding is consistent with outcomes observed the previous term.

Spring academic outcomes of the groups did not differ significantly in analyses which controlled for background factors (Appendix 7). Rather, initial reading score ($F = 4.39$, $p < .05$) and courseload ($F = 7.69$, $p < .01$) were more strongly related to the percentage of noncredit courses passed than entry group. Similar to findings from the previous term, high school average predicted performance in credit courses with respect to both term grade point average ($F = 6.75$, $p < .05$) and cumulative grade point average ($F = 7.46$, $p < .01$). Courseload also appeared to be significantly related to academic outcomes in both credit and noncredit courses (for percentage of noncredit courses passed, $F = 7.69$, $p < .01$; for term grade point average, $F = 4.43$, $p < .05$; and for cumulative grade point average, $F = 5.83$, $p < .05$).

During the spring semester, courseload differences between participants and nonparticipants were less pronounced than in the

fall, in that both groups took a similar proportion of noncredit and credit courses. By the end of the term, participants accumulated about the same number of credits (an average of 11.8 cumulative credits) as nonparticipants (an average of 12.0 cumulative credits). Students who took a greater proportion of noncredit courses in the spring tended to perform less well overall, probably due to the fact that these students were the ones progressing the most slowly and having the greatest academic difficulty.

Table 5

Spring, 1985 Academic Outcomes, By Entry Group

	Participants (N=81)			NonParticipants (N=348)		
Outcome Measure	N	Mean	(S.D.)	N	Mean	(S.D.)
% of Noncredit Courses Passed	50	48.3	(40.4)	222	52.3	(41.5)
Term Grade Point Average	76	1.6	(.9)	338	1.4	(.9)
Cumulative Grade Point Average	75	1.7	(.8)	337	1.6	(.8)

IV. DISCUSSION AND RECOMMENDATIONS

The SEEK Prefreshman Summer Program familiarizes SEEK students with college life, and gives them a chance to begin skills remediation and academic counseling prior to their first semester of college. The services provided by the program are intended to help students to meet the demands of college through early academic remediation and planning. Program advocates hope that participating students will fare better in their regular courses and remain in college as a result of this program experience.

The summer program gives SEEK students a head start on college coursework. Indeed, present findings indicate that participants who advanced to a higher course level as a result of a successful summer experience were able to maintain their progress in the fall. Thus, the program benefited stronger students by enabling them to advance more quickly than would otherwise have been possible.

This study, however, provides little evidence that participation in the 1984 program contributed to improved academic performance in the first year. Rather, program participation did not outweigh the strong influence of background and educational preparation on later college performance. Prior factors -- particularly students' academic preparation as

measured by their high school average and initial scores on basic skills tests -- played a much greater role in predicting how students would do.

Did participation in the summer program increase the likelihood that students would persist through the first year? The overall attrition rates observed in this study (7.5% after the first semester) compared favorably to the 10 percent rate of attrition reported for Baruch SEEK freshman who entered in 1979 (Hauguel, et al., 1982): however, spring term re-enrollment of summer program participants was lower than among nonparticipants, contradicting the expectation that summer program students would be more likely to remain in college their first year.

A similar comparison of program participants and nonparticipants which used aggregated data from all CUNY colleges (Annual Report for SEEK and College Discovery Programs, 1982-1983) yielded positive findings -- that is, that summer program participation increased student retention and success on a variety of academic measures. The discrepancy between university-wide findings and the findings reported here is evidence of the particularly difficult challenge faced by Baruch students their first year. Attrition of special program students at Baruch ranks among the highest in comparison to other colleges of the university. Thus, while the SEEK Prefreshman Summer Program allows some Baruch students to get a head start on college coursework and begin college at a more advanced level, its impact on retention and performance is weak relative to other

colleges. Data on re-enrollment after the second semester should further clarify these findings.

Summer program participation may, however, be helping SEEK students to deal more maturely with personal decisions affecting their academic careers. Summer program students who chose not to re-enroll for the spring term were more likely to do so through official college procedures which permitted them to document their reasons within a specified time frame acceptable to the college. Through the use of these procedures, students legitimized their withdrawal and protected their chances of returning to Baruch, showing an awareness of the possible consequences of their actions for continuing their college education. Fox (1984), observing that students who received WU grades were more likely to withdraw from college, suggested that the WU grade reveals the student's inability to cope with the prevailing demands and rule system of the institution and, thus, is an early sign of the student's alienation from the college environment. His interpretation is consistent with Tinto's formulation of the processes underlying college withdrawal (1975). Summer program participation may be having a positive impact on students by helping them to adjust to institutional norms and requirements.

The results of this study suggest that the summer program serves as a catalyst for student advancement and selection. The program permits successful participants to begin college at a higher course level in the fall; it also appears that students

who leave during the first year -- regardless of how successfully they perform during the summer[1] -- withdraw sooner, and more deliberately, if they have participated in the summer program.

Greater attention needs to be given to identifying ways in which the six-week summer program can be most effective, in light of the academic demands now placed on SEEK freshmen during their first year at Baruch. The present results suggest that the program may be having a positive impact on students' attitudes and college-going behaviors, despite the fact that advantages in overall academic performance could not be demonstrated. It may be unrealistic to expect that the six-week summer program produce immediately measurable differences in first-year outcomes. It is also possible that inter-group differences exist which cannot be detected using global measures such as semester grade point average, or re-enrollment. The use of more refined measures -- such as students' grades in specific courses, or measures of non-academic attitudes or behaviors -- would be necessary to determine if such differences exist. In either case, the present results urge program planners to explore ways to improve implementation methods to enhance the program's potential benefits.

The finding that summer program students were better at

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1. Participants who advanced after taking a remedial course in the summer were as likely to leave during the first year as participants who did not advance.

managing their withdrawal actions points to an area of counseling intervention deserving further study and development. Experimentation with alternative instructional techniques during the six-week program period should also be pursued to discover methods that can work more effectively in this setting. Methods for maintaining continuity of services through the summer and subsequent semesters might be explored as a means of strengthening program support. Research on the effectiveness of "cluster programs" (Beaver, 1973; Dukes and Gaither, 1984) provides some encouragement to initiatives to "block program" students through early semesters by standardizing course sequences, assigning students to common class sections and/or maintaining continuity of instructors and counselors. Part of the appeal of block programming is pragmatic, since it enables the program to sustain treatment beyond the six-week summer period, within regular calendar time and staff resources. Other CUNY colleges have attempted to implement various block programming plans, with mixed success (Fuentes, 1984; Gateles, 1985).

Future program planning and research should also assess the potential value of program participation to different subgroups of students with different patterns of academic need. The program now places its greatest emphasis on mathematics remediation. The implications of this policy for improving retention and academic performance in the first year are unclear at this time. The importance of initial reading skills for

first-year academic outcomes argues for increased attention to this area during the summer months. Expansion of language skills remediation -- whether for reading, writing, or both -- may make a difference, either by intensifying the program's remedial benefits and/or affecting the pattern of students who choose to participate. More attention to language skills would draw other SEEK students to the program, including many for whom English is a second language (ESL).

APPENDIX 1

Background

Age Distribution, By Entry Group

	Participants		NonParticipants	
Age in Years	N	%	N	%
17	5	5.5	12	3.6
18	44	48.4	190	57.8
19	25	27.5	98	29.8
20	8	8.8	18	5.5
21	5	5.5	8	2.4
22	2	2.2		
23			1	.3
24	1	1.1	1	.3
25				
26			1	.3
...				
31	1	1.1		
missing	0		44	

Sex Distribution, By Entry Group

	Participants		NonParticipants	
Sex	N	%	N	%
Male	23	25.3	127	34.0
Female	68	74.7	246	66.0

APPENDIX 1, continued

Ethnic Distribution and Bilingualism, By Entry Group

	Participants			NonParticipants		
Ethnicity	N	%	% Bilingual	N	%	% Bilingual
Puerto Rican	14	16.3	86	54	16.3	93
Other Hispanic	13	15.1	92	50	15.1	100
American Black	30	34.9	7	102	30.7	6
Other Black	15	17.4	20	31	9.3	20
Asian	6	7.0	83	62	18.7	97
White	5	5.8	40	24	7.2	54
Other	3	3.5	33	9	2.7	33
missing	5			41		

APPENDIX 1, continued

Language Use, By Entry Group

		Participants		NonParticipants	
		N	%	N	%
BILINGUAL	Yes	39	43.3	192	57.0
	No	51	56.7	145	43.0
	missing	1		36	
If BILINGUAL = Yes:					
LANGUAGE OTHER THAN ENGLISH	Spanish	29	74.4	104	54.2
	Chinese	6	15.4	48	25.0
	French	1	2.6	5	2.6
	Greek			6	3.1
	Arabic			1	.5
	Hebrew/Yiddish	1	2.6	1	.5
	Italian			2	1.0
	Korean			3	1.6
	missing	2	5.1	22	11.5

APPENDIX 2

Number and Percent of Students From Academic, Vocational, and Other High Schools, By Entry Group

	Participants		NonParticipants	
High School Type	N	%	N	%
Academic	61	67.0	319	87.9
Vocational	19	20.9	32	8.8
Other	11	12.1	12	3.3
missing	0		10	

Mean High School Average, By Entry Group

	High School Average		
Entry Group	N	Mean	(S.D.)
Participants	87	74.5	(5.0)
NonParticipants	340	73.4	(4.9)

APPENDIX 3

Students Passing on Initial Administration
of CUNY Skills Tests, By Entry Group

	Participants			NonParticipants		
Skills Test	Tested	Passed	%	Tested	Passed	%
Mathematics	91	36	31.9	372	152	40.9
Reading	91	48	52.8	373	189	50.7
Writing	87	22	25.3	372	89	23.9

NOTE: The minimum passing score on the mathematics test is 25 out of a possible total score of 40; on the reading test, 27 on Form A and 28 on Form B out of a possible score of 45; and on the writing test, 8 out of a possible score of 12.

Average Performance of Students on Initial Administration
of CUNY Skills Tests, By Entry Group

	Participants			NonParticipants		
Skills Test	Tested	Mean Score	(S.D.)	Tested	Mean Score	(S.D.)
Mathematics	91	21.2	(7.4)	372	23.0	(7.3)
Reading	91	26.8	(7.2)	373	26.5	(7.7)
Writing	87	6.1	(1.5)	372	5.8	(1.8)

APPENDIX 4

Entry Group, Background, Preparation, and Courseload as Determinants of Fall, 1984 Academic Outcomes

	Percent Noncredit Courses Passed		Term G.P.A.	
	F	p	F	p
Entry Group	19.63	<.0001	.85	n.s.
Sex	3.54	n.s.	.00	n.s.
Ethnicity	1.82	n.s.	.53	n.s.
Age	.79	n.s.	.00	n.s.
High School Type	.57	n.s.	.72	n.s.
High School Average	3.94	<.05	5.04	<.05
Initial Math Score	21.48	<.0001	.03	n.s.
Initial Reading Score	7.48	<.01	4.47	<.05
Initial Writing Score	.34	n.s.	1.79	n.s.
Courseload: % NonCredit Courses	1.38	n.s.	.09	n.s.

APPENDIX 5

Students Receiving One or More WU Grades in Fall, 1984

	Participants N=91			NonParticipants N=373		
Indicator	N	Mean	(S.D.)	N	Mean	(S.D.)
High School Average	9	72.1	(5.7)	30	70.5	(5.2)
Initial Mathematics Score	10	19.3	(8.1)	36	24.1	(7.5)
Initial Reading Score	10	26.9	(7.3)	36	26.3	(7.1)
Initial Writing Score	10	5.8	(1.8)	35	6.8	(1.8)

APPENDIX 6

Initial Preparation of Students Who Did Not Re-Enroll

	Participants N=91			Nonparticipants N=373		
Indicator	N	Mean	(S.D.)	N	Mean	(S.D.)
High School Average	10	74.9	(5.4)	21	71.9	(5.5)
Initial Mathematics Score	10	18.3	(5.5)	26	20.6	(5.4)
Initial Reading Score	10	25.1	(7.8)	26	22.8	(6.1)
Initial Writing Score	10	5.7	(1.5)	25	5.8	(1.2)

Fall, 1984 Academic Outcomes of Students Who Did not Re-Enroll

	Participants			NonParticipants		
Outcome Measure	N	Mean	(S. D.)	N	Mean	(S. D.)
% of Noncredit Courses Passed	10	42.5	(38.2)	25	44.3	(34.0)
Term Grade Point Average	6	1.1	(.7)	21	.8	(.9)

APPENDIX 7

Entry Group, Background, Preparation, and Courseload as Determinants of Spring, 1985 Academic Outcomes

	% Noncredit Courses Passed		Term G.P.A.		Cumulative G.P.A.	
	F	p	F	p	F	p
Entry Group	1.25	n.s.	1.43	n.s.	.13	n.s.
Sex	2.34	n.s.	.13	n.s.	.03	n.s.
Ethnicity	.55	n.s.	.38	n.s.	.57	n.s.
Age	2.43	n.s.	1.40	n.s.	.75	n.s.
High School Type	.28	n.s.	1.81	n.s.	1.57	n.s.
High School Average	.21	n.s.	6.75	<.05	7.46	<.01
Initial Math Score	.95	n.s.	.80	n.s.	.03	n.s.
Initial Reading Score	4.39	<.05	.01	n.s.	.02	n.s.
Initial Writing Score	.12	n.s.	.63	n.s.	1.73	n.s.
Courseload: % NonCredit Courses	7.69	<.01	4.43	<.05	5.83	<.05

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